DOCUMENT RESUME

ED 099 389 95 SP 008 705

AUTHOR Deal, Terrence E.; And Others
TITLE A Survey-Feedback Approach to Developing Self-Renewing School Organizations. Research and Development Memorandum No. 131.
INSTITUTION Stanford Univ., Calif. Stanford Center for Research and Development in Teaching.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Jan 75
CONTRACT NE-C-00-3-0062
NOTE 46p.

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS *Educational Innovation; *Environment; Feedback; *Problem Solving; School Districts; *School Organization; Surveys; *Technology

ABSTRACT

This memorandum describes an approach to the development of school organization in which the basic research hypothesis is that the structure of a school or school district must be congruent with its technology and its environment if problems are to be solved and educational innovations are to succeed. Current environmental, instructional, and structural problems in schools and school districts are identified. The intervention strategy known as organizational development is described, the psychological or social-psychological orientation of most current strategies is demonstrated, and a case is made for a structurally oriented survey-feedback approach to organization development in schools. Core elements in this survey-feedback approach are gathering information and developing a preliminary diagnosis, developing an organization approach to problem solving, providing feedback of the survey results, selecting strategies for change, and evaluating the impact of the strategies. The report also describes the current developmental work of the program in this area and its plans for field testing the structural approach and making the techniques more widely available. (Author)

ED 099389

STANFORD CENTER
FOR RESEARCH AND DEVELOPMENT
IN TEACHING

Research and Development Memorandum No. 131

A SURVEY-FEEDBACK APPROACH TO DEVELOPING SELF-RENEWING SCHOOL ORGANIZATIONS

Terrence E. Deal, Kenneth Duckworth,
and Susan Hurevitz Robbins

School of Education
Stanford University
Stanford, California

January 1975

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Published by the Stanford Center for Research and Development in Teaching, supported in part as a research and development center by funds from the National Institute of Education, U. S. Department of Health, Education, and Welfare. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education. (Contract No. NE-C-00-3-0062.)

Introductory Statement

The Center's mission is to improve teaching in American schools. Its work is carried out through five programs:

- Teaching Effectiveness
- The Environment for Teaching
- Teaching Students from Low-Income Areas
- Teaching and Linguistic Pluralism
- Exploratory and Related Studies

This paper shows how the research and development findings of the Environment for Teaching Program can be applied to a structural, as distinct from a psychological, approach to organizational development in schools.

Contents

Schools: Many Problems, Few Solutions 1

Sources of the Structural Approach: Research Basis and Theoretical Framework 4

The Research of the Environment for Teaching Program 4

Some Distinctive Features of the Environment for Teaching Program 7

Theoretical Foundations of Our Developmental Approach 8

The Nature of Today's Educational Problems and Some Limitations of Current Solutions 13

Environmental Problems 14

Instructional Problems 17

Organizational Problems 19

Summarizing the Environmental, Instructional, and Organizational Problems in Schools 21

Previous Efforts to Apply Organizational Development to Schools 23

The Survey-Feedback Approach to Organizational Development: Elements and Plans for Application 28

Information Gathering and Diagnosis 29

Organizational Problem Solving 30

Feedback 31

Selecting Strategies for Change 33

Evaluation 35

Will the Approach Work? 35

Level of Application 36

Steps in Field Testing the Approach 38

Expected Outcomes 39

Conclusion 40

References 41

A SURVEY-FEEDBACK APPROACH TO DEVELOPING SELF-RENEWING SCHOOL ORGANIZATIONS

Terrence E. Deal, Kenneth Duckworth,
and Susan Hurevitz Robbins

Schools: Many Problems, Few Solutions

Schools today are confronted with a seemingly endless cycle of complicated problems. Developing solutions to these problems places a heavy load on teachers, students, and administrators alike. But the burden is particularly heavy on school administrators who are attempting to find answers to problems of instructional change, community participation, declining enrollments, client revolutions, and the endless list of other difficult situations that plague leadership efforts at all levels of school organization.

As administrators attempt to find solutions to these problems, however, they often operate with several handicaps. First, educational problems, like other social problems, are immensely complicated and interlocking. Second, many of the problems in education reflect societal problems that can only be solved by major social changes. Third, systematic problem solving is not a skill often emphasized in the professional training of administrators. Finally, because education takes place in an organizational setting, the problems must frequently be solved by collective or organizational action, not by individuals operating independently. This last characteristic demands highly sophisticated ways of organizing the efforts of those who participate in the educational process. But many administrators have not been given

the training or the conceptual tools to equip them for building such organizations. Consequently, as we look at the predominant pattern of organizational structure in schools we see mainly a simple, undifferentiated, and often poorly integrated organizational pattern (Bidwell, 1965).

The gap between the problem-solving needs and the problem-solving ability of schools is obvious. How can this gap be narrowed? We believe that the most promising line of attack is to build organizational patterns at the classroom, school, and district level that will support, rather than impede, problem-solving efforts. We make the following assumptions: (1) the existing patterns of school organization are coming to be recognized as contributing factors in problems of teaching, learning, staff utilization and implementation of educational reform; (2) without basic structural, i.e., organizational, changes, efforts to train or retrain teachers and administrators are unlikely to obtain lasting effects; (3) structural changes, although difficult, are manipulable and within the power of administrators to make; (4) only through building and institutionalizing problem-solving capabilities within school organizations are teachers and administrators likely to be equipped to solve problems on a continuing basis; and (5) since there is accumulating a body of knowledge, insights, and tools that may provide educators adequate guidelines for changing the organizational characteristics of schools, this line of attack seems plausible and fruitful.

This memorandum has three purposes: (1) to derive, from the research of the Environment for Teaching Program at the Stanford Center for Research and Development in Teaching, a conceptual foundation for an

approach to developing the problem-solving capabilities of schools; (2) to develop a rationale for such an approach; and finally (3) to outline the specific elements of a survey-feedback approach which applies theory and knowledge about organizations to develop schools that are equal to today's problems.

Paralleling the threefold purpose, the discussion is organized into three parts. The next section of this memorandum discusses the work of the Environment for Teaching Program and the organizational theories that we have interwoven into our approach to developing the problem-solving capabilities of schools. In the succeeding section, we rely heavily on our conversations with teachers and administrators during the past two years to construct an assessment of contemporary educational problems. We categorize these problems as falling into three groups: environmental, instructional, and organizational. From this analysis, we conclude that our structural approach to problem-solving interventions addresses these practical concerns, and we go on to show how this approach differs from and complements comparable attempts to provide assistance. Finally, we describe in considerable detail the five core elements of our approach to developing the problem-solving capacity of school organizations and outline the steps being taken to test this approach in field settings.

In the discussion we occasionally refer to three levels of school organization--district, school, and classroom--because we believe that our approach is adaptable to all three levels. Our emphasis in this memorandum--and our work during the coming year--will be at the local school level.

Sources of the Structural Approach: Research Basis and Theoretical Framework

The Research of the Environment for Teaching Program

For several years, the Environment for Teaching Program has studied schools from a sociological perspective. Our studies focus on the organizational characteristics of schools. In the past, we have looked at the impact of open-space architecture on teacher's perceptions of the way their work is organized (Meyer & Cohen, 1971). We have studied the relationship between team teaching and other organizational properties at the school level (Schiller, 1972; House, forthcoming; Molnar, 1971). We have compared formal evaluation processes in schools with those in other organizations (Dornbusch & Scott, in press). We are now investigating the relationship between structural characteristics at the staff, school, and district levels and aspects of the instructional program (Cohen & Bredo, 1974; Deal, Meyer, & Scott, 1974). In higher education, we are inquiring into the relationship between organization structure, the organization's environment, and innovation and change (Baldridge & Burnham, 1973; Deal & Baldridge, 1974).

Our work emphasizes the importance of the formal patterns of organizations, an emphasis which we generally label structural. We are interested in the factors that determine structural features at the classroom, school, and district levels of school organizations. We are examining the relationship of structure to other organizational characteristics and processes such as leadership, problem solving, decision making, and conflict resolution. We are also interested in the

relationship of structural patterns to teacher morale, student morale, and student effort and achievement.[1]

In our studies of schools, several formal properties of organizations provide a perspective. These include: Vertical differentiation--How is authority to make decisions or to control others distributed among organizational participants? Lateral differentiation--How are the organization's various functions divided or distributed among participants? Interdependence--To what extent do various participants depend on each other in accomplishing their work? Coordination--What mechanisms are used to integrate the efforts of participants? Formalization--To what extent are actions of participants guided by explicit rules, policies, or procedures? Evaluation structure--Who sets evaluation criteria, samples and appraises performance, communicates this judgment to participants, and ultimately distributes organizational sanctions? This list is not exhaustive, but it should illustrate the structural emphasis of the Environment for Teaching Program.

In its structural emphasis, however, the Program does not exclude important organizational processes. In fact, which organizational phenomena are structure and which are process is an ambiguous and often useless distinction to make. Evaluation, for example, is a process, but it is also part of an organization's formal structure.

Neither does the Program's perspective exclude the attitudes and needs of people who participate in organizations. In our view, students,

---

[1]These topics are discussed in Technical Reports currently being prepared by the Environment for Teaching Program.

teachers, and administrators are part of school organizations. They interact with each other in distinct structures relying on identifiable processes. Some of these formal patterns facilitate human interaction, satisfaction, and task accomplishment; others do not. Designing these features, then, becomes a highly important task of school administrators.

We believe that effective schools or school districts are ones that have developed structural (i.e., organizational) patterns suitable to their environmental demands and instructional programs. As an example: In diverse, dynamic communities we would expect to find that successful schools are highly differentiated both vertically and laterally, and that the efforts of participants are interdependent but also well coordinated and knit together by both administrative efforts and lateral communication among the teaching staff. As another example, where schools have instructional programs that are individualized and heavily diagnostic we would expect those that are successful to have differentiated their structure by developing teacher teams, adding specialists or aides, or both. We would also expect, in these schools, a high frequency of program and teaching evaluation, carried on both formally by the principal and informally among teachers.

But for other environments or instructional systems, the shape of a successful school might be very different from our two examples. In other words, there is no one best way to organize; schools designed to be compatible with the nature of the instructional program and the characteristics of the relevant environment will be those generally that function effectively. By effectively, we mean more than just successful by the traditional criterion of student achievement. We

define effectiveness broadly to include other student outcome measures such as affective growth or satisfaction, as well as other indicators of success such as community satisfaction, teacher morale, instructional change, and administrative stability.

Some Distinctive Features of the Environment for Teaching Program

How does our perspective differ from others? Many programs of organizational research focus on the informal aspects of schools. Of interest to researchers in this tradition are such issues as the adjustment of individuals to the organization, leadership processes, problem-solving and decision-making processes in small groups, norms and values, and the "climate" of an organization. While this work is important and, indeed, highly related and complementary to ours, we emphasize the formal aspects of schools, for two principal reasons: because we feel that the structural side of these organizations has not received adequate attention, and because we believe that structural variables provide levers that can be manipulated by school administrators to promote or to control organizational growth, change, and stability.

The Environment for Teaching Program may also be distinguished from many other programs of research by our deep concern for the practical implications of our work. Because of this concern, we are conducting a strong development effort in the midst of our ongoing study of a large number of schools. What do we mean by the term "development"? To us, the term involves translating or applying our theories and research results to the practical problems that schools face. Development, or the application of our research to ongoing school problems, also provides

another means of testing our research hypotheses. Research and development are symbiotically related activities; each enterprise can support and nourish the other.

Three criteria govern the shape of our developmental efforts. First, the work must be conceptually compatible with our ongoing research relating the organizational structure of schools to instruction and environment. Second, the developmental effort must relate to important problems professionals are attempting to solve. Third, our efforts in development must relate to, but not be redundant with, other developmental efforts in the area of school organization. In the remainder of this section and in the next section we measure our proposed approach against these three criteria. We then go on to show how our overall developmental approach in the Environment for Teaching Program can be applied to the particular activity known as organizational development in schools.

Theoretical Foundations of Our Developmental Approach

The conceptual foundation of our developmental work combines two structural perspectives: the Structure--Technology--Environment model of the Environment For Teaching Program, and the Lawrence-Lorsch Environmental Contingency model. Each of these is essentially a contingency model of organization. The first predicts that successful organizations will have developed structural characteristics appropriate for their central task, or technology. The other predicts that successful organizations will have developed structures compatible with their relevant environments. We now discuss each of the models briefly

and show how we have integrated both into the conceptual framework of our approach to developing the problem-solving capacity of schools.

The Environment for Teaching model. The main component of the Environment for Teaching approach relates organization structure and the organization's technology. Technology, as a sociological concept, characterizes the nature of the work an organization performs; in school settings, it translates roughly as the instructional program through which student thinking and behavior are changed.

In this abstract view, there are two dimensions along which instructional programs can vary: instructional differentiation and the routinization of instructional decisions. The general hypothesis of the Program is that instructional programs which are highly differentiated--with respect to the way students are viewed and the materials or procedures actually used in instruction--and which require highly discretionary responses on the part of teachers will require more complex work arrangements and an increased problem-solving capacity at the school and district level if such programs are to survive. If these are not forthcoming, instructional complexity will be reduced or the program will be dropped.

A basic assumption of the Environment for Teaching staff is that as a result of special attention and abundant resources, instructional systems have become more sophisticated and complex while the organization of schools has frequently remained relatively undifferentiated and simple. If this is true, it provides one explanation for rapid turnover in programs or unintended instructional modifications. If new instructional programs are to be supported and maintained, and the problems they raise

solved, then an organization must be developed at the school level that is more highly differentiated and yet highly integrated and coordinated. Team teaching and the use of specialists are two concrete examples of organizational patterns at the school level that may provide increased support for sophisticated teaching approaches.

The second component of the Environment for Teaching model has been developed by Baldridge, who has pursued a somewhat different line of research. His focus has been more on the environment than on the technology of schools. He has examined, in higher education, the relationship between the structure of organizations, their environment, and rates of innovation and change. But he has also studied the environment-structure relationship in public schools. In a study of Illinois school districts, for example, Baldridge and Burnham were able to show that school districts operating in dynamic, heterogeneous environments developed complex, highly differentiated structures. They then went on to show that as these school districts became more complex, they also became more innovative. School districts with differentiated, complex structures adopted a higher proportion of instructional and administrative innovations than did those with less well-developed structures.

The Lawrence and Lorsch model. The second organizational approach we have used to build the foundation of our development work is the structure-environmental contingency theory of Lawrence and Lorsch (1967). This perspective has been applied by the authors to a variety of organizations in their own organizational development work (to be discussed later). This model also has some empirical confirmation; several preliminary studies of industrial organizations suggest that their

hypotheses have some merit. Some preliminary research work has been done in schools.

Essentially, Lawrence and Lorsch relate two features of organizational structure to states of the organization's environment. Their conception of structure consists of two structural concepts--differentiation and integration--and two process concepts--conflict and conflict resolution. Their main proposition is that when the structure of an organization is congruent with the environment, an organization will be more effective than when the structure and environment are not congruent. For example, in highly diverse, unstable environments, Lawrence and Lorsch predict that effective organizations will be those that are both highly differentiated and well integrated. However, they argue that organizational differentiation and integration are antagonistic states and that differentiation, by producing different outlooks and orientations on the part of participants, leads to conflict. To achieve adequate integration, organizations operating in dynamic environments must develop mechanisms for solving problems or resolving conflict. Effective conflict resolution results in integration.

Integration of the models. What is the common thread running through these two approaches? Both approaches argue that the structure is contingent, the one emphasizing the environment, the other both environment and technology. Lawrence and Lorsch argue that successful organizations have adapted structurally to their environments; the Environment for Teaching work lends theoretical support, and now even some empirical evidence to the proposition that successful organizations have designed structures that are appropriate to the nature of their programs or environments.

There are many other studies in the organizational literature which support these approaches. This fact provides added confidence in the basic prediction that successful organizations will have designed structures compatible with what they are trying to accomplish and the environment in which they function.

Our conceptual integration of the environment-technology approaches can be summarized as follows. Technology is the process through which schools change instructional inputs--i.e., students--into instructional outputs. In other words, students come to school thinking and behaving in one way and leave thinking and behaving differently. The environment--the community and social climate in which the school or school district functions--provides the student inputs, influences instructional goals, and receives students in their altered state. Structure is the organization of human resources that operates the technology. If a school is to be effective, the structure should be designed to take into account both the nature of the environment and the characteristics of the technology.

To summarize the discussion thus far, our approach to developing school organizations is aimed primarily at assisting administrators to design structures or work arrangements that are compatible with two major considerations: the instructional program (technology) and the task environment. The approach has evolved from our studies of school organization and is closely connected with ongoing research in the Environment for Teaching Program. Because of this close connection, the development work will provide important assistance to the program in refining

important research concepts, clarifying interpretations, and further testing central hypotheses. Above all else, however, it will provide an immediate channel for applying our theories and research directly to the critical problems schools face. This, as we have pointed out, is the main goal of development. The other criteria used to measure our developmental effort ask whether our effort is needed and, if so, whether similar assistance is provided by other approaches. We examine these questions in the next section of this memorandum.

The Nature of Today's Educational Problems and Some Limitations of Current Solutions

The purpose of our developmental approach is to provide educators with knowledge and tools that will enable them to build schools with the organizational capacity to solve critical problems. We believe that many of the problems in education have increased the demands and strains on the basic structure of school organizations. We believe that for the most part, these problems can be seen to originate in the school's environment, in its instructional program, or in the structure of the organization itself. In our frequent meetings with teachers and school administrators, both in the Stanford Center for Research and Development in Teaching and in the field, we have identified considerable consensus among professionals as to the central problems schools experience. This consensus suggests to us that our organizational approach to schools is needed. We now discuss the problems our approach will ultimately address.

Environmental Problems

Educational environments are currently in flux, but school communities are usually quite vocal about their diverse expectations for education. Organized teacher groups are also quite outspoken about their wishes. Demographic and economic changes exert their influences. How does the environment look from the perspective of teachers and principals in schools?

Community input. In developing educational goals and objectives, schools increasingly must take into account the needs of the local community. State and federal funding is often contingent upon careful documentation of community needs. Schools are also becoming more accountable for meeting these community needs once they are translated into educational goals. Three illustrations should suffice. Principals reported to us last year that they were having great difficulties in trying to assess the needs of the local community. One superintendent conducted a random survey of his district in which the community evaluated each district program in terms of its contribution to district goals. And many teachers reported being constrained by the community in changing instruction.

Diversity of clientele. There is some evidence, that, for various reasons, the diversity of clientele served by local schools in most communities is increasing--or, at least, that the diversity always present is now being expressed. Local communities often vary immensely in needs, values, and attitudes toward education. Two examples from our own research illustrate this. In one school a principal has three separate instructional pods which he has matched with sectors of the community. Students

are assigned to pods according to their educational needs and the wishes and preferences of their parents. The educational programs in these pods vary from traditional three R's to integrated open classrooms. In another community a principal serves two schools--one highly conservative, the other highly innovative. The principal reported to us that he must wear different clothes and employ radically different administrative styles in each situation.

The impact of mandated desegregation has also increased the range of diversity schools confront at the community level. Homogeneous school communities have been reconstituted by busing and other desegregation strategies. Schools have been given additional responsibilities for integrating children of various ethnic and socioeconomic characteristics and now even on the basis of sex.

Instability of clientele. Not only is the clientele schools serve often diverse, it seems to change constantly. These changes are produced partially through geographic mobility, but also through an unparalleled transience of social attitudes and values. As one high school principal put it:

> Just as we developed alternative programs to meet the clamor for "relevance" and "humanistic schools" in the 1960's, we are now asked by both students and parents to devote more attention to academics and to offer more career-oriented programs.

Public criticism. Principals and teachers report to us that they are frequently criticized from many sectors of the public and professional environment for failing to accomplish highly ambiguous, and often contradictory, goals. Perhaps the social belief system that once protected schools has been eroded. But whatever the reason, our information

suggests that schools have been put in the position of having to prove that they are succeeding rather than merely having to prove that they are not failing. Both teachers and administrators consider this a difficult feat. One elementary principal put it this way:

> My job is like flying through a flak field over Dresden. If we are not catching hell from parents or the local community, then some egghead in the ivory tower publishes an article in which he proves that we aren't making any difference.

Teacher unionism. Teachers have become more collectively active and have widened the areas in which they want to affect school decisions. The unionization movement has protected teachers, thus making it hard for schools to cut expenses by reducing the size of the professional staff. Teachers have also gained new leverage in collective bargaining, and the power of the unions has extended to the school level, as well as the district. A principal told us:

> It is much easier to cope with an incompetent teacher than to dismiss one. Last year, I tried to fire a teacher and that is all I worked on the whole year. The teacher beat us in court and is back this year.

Financial constraints and declining enrollments. In an unfavorable economic climate, fewer resources exist for school operations. This problem is accentuated by legislation and court decisions which redistribute the existing wealth. Some formerly wealthy school districts are faced with the problem of operating programs with substantially reduced monies. In a related vein, a general dip in school enrollments has reduced the base support available to school districts while inflation and rising salaries have increased the cost of education. As an example of the consequences of these trends, the Stanford Center has

received several calls from school districts asking for the pros and cons of closing schools as a way of dealing with decreasing enrollments. In one Bay Area district of four elementary schools, one school will probably be closed next year.

Stable staffs. The decreasing enrollments and the oversupply of teachers have markedly stabilized professional staffs within districts. In our survey of Bay Area elementary schools, for example, 80 percent of the schools reported that at least two-thirds of their teachers were tenured. Several principals in our study commented that their schools would probably not receive any "new blood" in the next decade. One principal summarized the situation in this way:

> I'm stuck with the teachers I have and they are probably stuck with me. In the old days our internal problems were solved by opening a new school or the turnover in staff. Now, it doesn't look like divorce will be available as a way of solving our internal problems.

Instructional Problems

Many of the environmental issues are directly or indirectly related to instruction. Decreasing resources have created accountability pressures. Diversity in students has created a need for individualized instruction. New developments in educational psychology have expanded the range of instructional tasks for which the schools are responsible. How do these issues affect teachers and administrators?

Accountability. Teachers constantly report to us their troubles in developing observable, measurable educational outcomes. They also report contradictions between accountability and experimentation:

> I'm supposed to try new approaches to reading, but I am also asked to show success. To me, there just isn't enough time in the school day to do both.

Or, another teacher states:

> We know where we have to succeed--in reading and math. But what gripes me is that the district office and the incessant stream of specialists also pressure us to do things that are more "groovy."

Individualization. Both teachers and administrators frequently portray an educational climate that places a high premium on individualization or tailoring an educational program to each individual student. For example, an administrator and teacher both agreed that

> We now have to diagnose students, prescribe activities, and maintain highly flexible classrooms. We don't even have the time to do these things, let alone possess skills that are necessary. But if we try to individualize by giving kids more autonomy to choose learning activities then the parents complain.

Affective outcomes. Schools are becoming more responsible for affective, as well as cognitive, outcomes. But educators complain that the technology for attaining such ends is underdeveloped, as is that for determining whether the outcomes have been attained. In one school district, for example, parents, teachers, and the community all rank self-worth and "a positive self concept" as the prime goal of the schools. Teachers, however, seem to be frustrated by the lack of direction in achieving these goals or knowing what impact their current efforts have on student personal growth and attitudes.

Complex instructional systems. The resources poured into instructional improvement have yielded a vast reservoir of instructional materials and systems. Many of these are sequenced, highly differentiated, sophisticated, and complex. The entry of new firms into the instructional market has increased the number of available materials and made it even more difficult to determine the worth of a particular

set of materials or systems. One urban administrator reported to us that each year a new approach to reading is mandated by the district. The problem, according to him, was that "even at the end of the school year our teachers don't know how to use the system. Each instructional failure is replaced by another, which in turn fails."

Increased teacher choice in selecting materials. Local schools and teachers in California have been given increased autonomy in selecting educational materials. One teacher, exuberant about the prospects of having greater autonomy, still complained about the excessive time involved in selecting materials. A principal reported to us that a major problem of his is that teachers have no basis for selecting from among the incredible range of materials, many of which are specialized, regional, or ethnic curricula.

Learning disabilities. A growing awareness of learning disabilities and other physical, mental, and social impediments to learning has placed new diagnostic demands on schools. In one school, for example, a year-end assessment of students in a high-powered and expensive remedial reading program revealed that 80% of the students had major visual difficulties. Diagnostic work which uncovers emotional or medical problems and social difficulties that impede learning puts new pressures on schools to screen students thoroughly before proceeding with instruction.

Organizational Problems

In response to developments in the educational environment and in instruction, many schools and school districts appear to be grappling with attempts to reorganize. But the structural patterns that seem to

be emerging have sometimes created problems of their own. Our teachers and administrators talk about these problems as follows.

Specialists. Specialists are becoming more common in schools and school districts. But their presence raises new questions. How do they fit into the current structure? How will their specialized knowledge be used? One teacher complained that the circulation of specialists through his classroom, each pushing their particular specialty, frustrated him because half of what they recommended, he could not possibly implement. One elementary principal confided to us that specialists threatened his role as instructional leader of the school:

> Teachers respect my instructional suggestions even less now than they did before the specialists came. But I am still formally responsible for instruction and for evaluating teaching in this school.

Differentiated staffing. Where differentiated staffing has been implemented, it has often increased the number of different roles in the classroom. However, educators often complain that very rarely are guidelines developed showing how these new roles will be differentiated, integrated, or coordinated.

> New roles are popping up everywhere--classroom aides, community volunteers, student tutors--but how do I find time to coordinate all these people in my classroom?

Teacher teams. Teacher teams have also become common in schools. But little help seems to be provided to teachers in structuring their teams or in providing the time and other resources necessary to develop the new skills and behaviors required for working in small groups. Our own evidence, for example, suggests that the size of teams is being reduced to two or three teachers. We believe this result reflects

problems of coordination and the amount of time spent in grappling with internal problems.

Local autonomy. Principals think that more autonomy has been granted to the local school. Many also feel that, although the level at which decisions are made has been moved downward, principals have not been given adequate training or assistance for their new role. Neither, apparently, have they been prepared for the increased demands for teacher involvement in school decision making which may result from, among other sources, teacher participation in teams.

For example, an elementary principal complained that he "used to be given policy guidance from the district office. The new superintendent, however, made it clear that nearly all the important decisions would be made at my school. I am also responsible for the consequences of my decisions and I simply don't know how to handle many of the problems. I became a principal because I was a good teacher; my training is not adequate for my new responsibilities."

Summarizing the Environmental, Instructional, and Organizational Problems in Schools

Our catalogue of general school problems reported to us by teachers and principals leads us to make five generalizations. First, schools are increasingly confronted by a highly diverse, changing, and active environment. Second, schools are bombarded by improvements in instructional technology, most of which make instruction more complex. Third, organizational changes made by some schools have increased the complexity of schools and interdependence among the roles of participants. Fourth,

greater autonomy is being given to schools in responding to problems at the local level. Fifth, and most importantly, all of these factors have placed heavy demands on the school as an organization, on administrators, and on individual teachers. This has resulted in greater needs for communication, more interdependent work situations, a greater volume of more complicated problems, and increased conflict. Schools have been pressed to develop a highly sophisticated organizational capacity for solving this endless cycle of problems.

Unfortunately, many of the environmental, instructional, or organizational problems we catalogued above also provide limitations or constraints to the school's response. Because of decreasing enrollment and the oversupply of teachers, schools find it hard to change personnel. Because of decreased financial resources, released time, as well as materials and assistance from the outside are different to obtain. Because the conventional school structure provides little support for problem-solving activities, the problem-solving potential of the school is decreased.

Another limitation has not yet been mentioned. Because of the dominance of a psychological perspective in schools, difficulties are often perceived to originate in the personalities of the organizational participants, and when conflict occurs it is generally cast into a psychological framework. As an example, in the school described in Smith and Keith's Anatomy of an Educational Innovation, sensitivity training was offered prior to and during the adoption of a major innovation in education. Although the sessions were successful in promoting personal awareness, the authors show how they contributed to the overall

organizational problems of the school (Smith & Keith, 1973).

This observation is related to a final generalization which, we suspect, limits the extent to which schools can respond to problems: the predominant perspective of organizations is one of human relations rather than a more structural focus. Most administrators and teachers we have talked with have conceptions of organizations that emphasize the informal aspects. But these conceptions often lack other characteristics of organizations: their relevant parts, their structure, and theories about how organizations behave. Consequently, teachers and administrators do not yet see a need for a structural approach even though the problems they face may require more fundamental structural solutions. They tend therefore to look elsewhere for assistance in developing answers to important problems. Assistance is often provided by the technique known as organizational development. But what kind of help does this technique now offer schools?

We now examine some other approaches to organizational development in education. The main purpose of this discussion is to show how the Environment for Teaching approach is both unique and an important complement to other organizational development efforts.

Previous Efforts to Apply Organizational Development to Schools

Organizational development (OD) is a specific but not too well-defined field. As a working definition, we may call OD an intervention to help people in an organization solve problems. Practitioners of organizational development have applied a wide range of organizational theory and research to problems experienced by organizations in diverse

industries. Through the leadership of Matthew Miles (1965) and Philip Runkel and Richard Schmuck (1972), in particular, OD perspectives and activities are being used more and more extensively in schools. Their important work has stimulated a number of programs, strategies, interventions, and approaches which have applied organizational knowledge to assist schools in responding to the issues we have identified here, as well as to other problems which educational organizations must solve.

We have been heavily influenced by much of the previous organizational development work. We consider our structural approach, however, to be unique within the field of OD. This uniqueness stems largely from the "human relations" emphasis of the preponderance of OD that is actually practiced in schools (Deal, 1974). We believe that the tendency to ignore structural perspectives in organizational development has greatly reduced the potential assistance that could be provided schools in solving the critical problems they face. In no way do we wish to suggest that the structural emphasis is a panacea and should replace other OD perspectives. We believe that the various approaches within the field are complementary, and that their suitability depends largely on the nature of the particular problem that needs to be solved. But we think much previous organizational development work, because of its neglect of structural approaches, has shown the following limitations or weaknesses--particularly in view of the difficult educational problems experienced at the school level which we outlined earlier.

First, because organizational development interventions in schools have focused largely on individual behavior, sensitivity training, small-group communication, and school climate, they have succeeded mainly in

facilitating the processes within the organization and thus helping educators to cope more effectively with existing structures. OD has successfully improved practitioner skills, and occassionally this has led to structural change. But, just as often, new skills and outlooks have been stymied by inappropriate structures or have disappeared because of the lack of continued reinforcement and support.

Second, many of the OD interventions have focused on variables that are difficult or impossible to manipulate. Changing organizational structures is difficult enough; changing people's outlooks or trying to affect a school's climate are very slippery, difficult tasks. It is difficult to make such changes if the levers are abstract and ungraspable or if they are outside the control of administrators and teachers.

Third, many of these interventions or strategies have been applied to all situations without adequate diagnostic efforts. Very often every school in a district will get a dose of sensitivity training or a communication workshop. The example of Kensington School in Smith and Keith's work is a case in point: apparently, no attempt was made to diagnose the school's difficulty and then to employ a strategy aimed specifically at the trouble. The sensitivity session was conducted without first determining the need. Schmuck, Runkel, Miles, Lawrence and Lorsch, and many other OD specialists have heavily emphasized diagnosis; in practice, however, organizational development specialists have often applied their specialty without regard to its relevance for the problem being addressed.

Fourth, many OD interventions are developed and delivered by change agents who rarely make implicit their underlying conception of school

organizations. Teachers and administrators often do not understand or share the change agent's perspective. Consequently, recommendations or training activities are implemented without an agreed-on understanding of the context or the underlying agenda. Without this basic understanding, interventions or recommendations are misconceived, poorly implemented, or forced into teacher or administrator perspectives with which they are incompatible.

Fifth, interventions or change strategies are often "one-shot" affairs aimed at one part of the system. Solutions to problems are developed and applied. They last only until a new crisis arises, and then a new consultant is brought in. The problem-solving capacity of the school is never developed. Solutions to problems are dependent upon an outside resource. The process is not institutionalized.

Finally, many interventions, if they produce any effects at all, produce short-term effects. Bowers (1973) evaluated the long term impact of several organizational development strategies. Most did not produce lasting effects on the organization. Survey feedback, or the mirroring of results back to the system, was one strategy which produced most significant and lasting effects. Where such survey data were reported to schools, significant changes in the school's climate were noted and the changes were persistent over time.

In sum, the effectiveness of the assistance schools have received from the field of organizational development in responding to problems has often been reduced by the limited scope of the strategies used to apply organizational knowledge. Under what conditions might organizational theory be applied to schools in a helpful and effective way?

As already indicated, the critical problems schools face can be grouped generally under three general concepts: environment, instructional program, and structure. Organizational theory has developed many propositions which relate these three concepts, and in some cases, there is good empirical evidence to support the propositions. The general implication of this approach is that schools can attack educational problems in one of three ways: (1) change the environment, (2) change the program, or (3) change the structure, and institutionalize and provide support for problem-solving processes.

We believe each of these three directions can be followed. The environment can be changed by political strategies; the program by curriculum development strategies; the structure by managerial strategies. But we have selected the structure of schools as the most promising area for change and have identified a theme in organizational theory which asserts that an effective organizational structure is contingent on the nature of the program and the characteristics of the environment. To restate: this approach assumes that for any group of educators operating a given program in a given environment there is an organizational arrangement that will best permit them to contribute their resources toward the accomplishment of the school's central task.

Our present developmental effort is directed toward designing a survey-feedback approach to organizational assessment and renewal in schools. In our view, this approach meets the three criteria we outlined initially. It is intimately related to our theories and research and allows us to do what we do best--organizational analysis and survey research. It seems to address many of the critical problems that schools

are experiencing. The structural emphasis of the approach fills a gap in the field of organizational development, and thus we will be able to make a contribution to this important area. Since our approach also relies heavily on diagnosis and on sharing our perspective on organizations with teachers and administrators, we think it is a necessary complement to existing approaches to organizational development. Most importantly, however, the approach provides one additional link between our program and the field, allows us to test our general hypotheses in the midst of school realities, and permits us to begin the process of translating the implications of our efforts into guidelines for reorganizing schools.

The Survey-Feedback Approach to Organizational Development: Elements and Plans for Application

Our approach to organizational development borrows more heavily from sociology than from psychology or social psychology. The primary target of our intervention is the structure of the local school unit. The elements of this approach closely parallel the stages frequently postulated for problem solving, i.e., sensing the problem, gathering information, identifying and defining the problem, selecting solutions, implementing solutions, and evaluating the results.

The five core elements of our attempt to apply our theories and research to schools are: (1) information gathering and diagnosis--using research instruments to gather information about the organization, its structure, environment, and program, and analyzing the information

to identify or pinpoint organizational trouble spots; (2) developing an organizational approach to problem solving--communicating a structural perspective of organizations to teachers and administrators in an analytical model relating structure, environment, and the instructional program; (3) feedback--communicating to participants the results of the information-gathering survey, and using the organizational problem-solving model to highlight and develop consensus on possible problem areas in the organization's structure, program, environment, or in the interrelationships among the three; (4) identifying strategies for change--selecting a strategy for bringing about change or developing congruence between the organization's structure and its environment or program; and (5) evaluation--assessing the effects of the change strategy.

We discuss each of these elements in some detail below, and then go on to set forth our concrete plans for applying the structural approach.

Information Gathering and Diagnosis

Many organizational development strategies are applied without first determining the organizational problem. Such strategies as team building, laboratory training, or role clarification activities may be seen as the answer to all organizational ills, with all organizational problems seen as solvable by the use of these methods. In contrast, our approach begins with a detailed, systematic assessment of the organization's structure, environment, and program.

This assessment includes obtaining information through both questionnaires and interviews. Many of the instruments we will use have already been developed and used in the research of Environment for

Teaching Program. We are currently in the process of putting these measures together for use in our organizational development effort. Initially, these instruments will be administered in a school by Environment for Teaching personnel. The preliminary analysis of the information will be carried out by the Environment for Teaching staff, but we will also want to involve school representatives in this activity. We hope eventually to package the instruments in such a way that they can be used effectively by a principal or staff without additional expert resources.

Organizational Problem Solving

Our previous work with teachers and administrators provides ample evidence that they tend to view organizational problems from a psychological or social-psychological perspective. Unless administrators and teachers at least develop the ability to view organizational problems structurally, they will not be able to use the information from our survey to identify and define critical problems. Structural analysis, viewed from a human relations bias, is likely to be perceived as anti-humanistic and useless. Our experience with two informal field tests of our approach has confirmed this impression. An important component of our survey-feedback approach will therefore be to influence the cognitive structure of teachers and administrators, to give them an alternative way of thinking about organizations, to encourage them to raise new questions and consider different solutions.

How will our structural perspective be communicated to superintendents, principals, and teachers?

The structural approach of Lawrence and Lorsch is quite simple. It contains four concepts--differentiation, integration, conflict, and conflict resolution--and some general propositions about their relationships. We think that an adaptation of their approach can be communicated easily to educators. We also believe that it can be modified to incorporate the essential concepts from the Environment for Teaching work.

Our goal in the organizational problem-solving component will be to communicate these essential concepts and propositions prior to sharing the information from our survey. We will use actual and hypothetical case studies, readings,and simulation exercises, where necessary, to illustrate and highlight the structural perspective.

Specifically, Smith and Keith's case study of Kensington School is rich in examples which highlight our view of organization. In addition, two members of our program have developed a book of readings dealing with organizational innovation and change in schools (Baldridge & Deal, in press). In this volume some 30 organizational studies have been organized into three areas: perspectives on organizational change and innovation, strategies, and case studies. We are now in the process of developing other materials, including hypothetical case studies of schools with radically different environments and programs showing how each school uses a remarkably different structure to deal successfully with its particular situation.

Feedback

Once the information is gathered and analyzed, and teachers and administrators have developed the ability to look at organizations

structurally, we will feed back the results of the survey. This feed back may be to the principal, to team leaders, to a school-wide committee, or to the entire faculty--depending on the requirements of the situation. In our view, however, involving the principal and an entire faculty in the feedback process is desirable.

The feedback sessions with schools are the backbone of our approach. Their purpose is to report the results of our initial survey to administrators and teachers, using concepts from our analytical model to locate existing or potential problems. We will be able to report information about the school's environment, its program, and its existing organizational patterns. We will be able to point to inconsistencies among these three elements or to identify problem areas in the organization's structure. For example, a school operating a sophisticated reading program, in which teachers have been assigned to various specialties, may show difficulties in "pulling it all together" and may report excessive conflict. We would then be able to explain this conflict structurally and to show how the increased differentiation, rather than individual personalities, has contributed to the conflict and to suggest ways in which the efforts of the teachers could be more tightly integrated. Or, as another example, in a school bombarded with contradictory demands from a highly diverse community, but where structural change, for one reason or another, is difficult or impossible, we would expect to highlight this fact and offer suggestions as to how the various community subgroups might be brought together to iron out their educational differences.

Although the Environment for Teaching staff will be heavily involved in this feedback session, we do not expect our role to be that of defining the problem for the staff. Rather, we see our role as catalytic, i.e., as one of defining the problem with the staff, combining our information and perspectives with theirs in identifying the areas of difficulty. We expect the feedback sessions to be discussions, but organized around the agenda derived from the survey and the analysis.

Selecting Strategies for Change

Developing strategies to solve problems defined in the feedback sessions is the fourth element of our approach. We would expect the information gathering and analysis and the feedback sessions to yield well-defined problem areas and to identify possible barriers or constraints to making needed changes. In our approach to organizational development, problems can be solved by making changes in one of three general areas: the environment, the program, or the structure of the organization. Producing environmental change is essentially a political task; changing the program is an instructional or curriculum development task; changing the structure is primarily an administrative or managerial task, but internal politics are also involved.

Our approach strengthens typical processes of selecting change strategies in two ways. First, our conceptual framework permits strategic thinking of an if-then sort. Selected change strategies can be analyzed in terms of their impact on other parts of the organization, on the environment, or on the instructional program. Unintended consequences can be identified, resistance can be anticipated, costs predicted, and

necessary training or inservice activities provided. The process is one of systematic planning with the analytical model and the information about the existing situation serving as a basis for anticipating the results of intended solutions.

Second, our approach emphasizes the problem rather than any one specific strategy. This means that several different strategies might be identified as possible solutions to the problem. For example, a school experiencing overwhelming community dissatisfaction with the instructional program might identify three strategies: developing a school-community council with representatives from both the school and community to meet over an extended period; individualizing the instructional program; or conducting an educational campaign to give the community a more accurate image of the existing instructional program. On the basis of several criteria--perhaps cost, efficacy, manipulability, and possible resistance,--the school might select the structural strategy, i.e., developing a school-community council. A commitment would be made to give the strategy an adequate test and to protect it against short-range reactions or immediate demands. If given time, the strategy does not solve the problem, another is tried.

Implementing effective change strategies is the payoff for the school. In developing such strategies we will work collaboratively with the school participants and should be able to draw on our own experience, their experience, and the experience of others who have tested specific change strategies. Our central emphasis will be on conducting a dialogue with the staff to uncover a range of strategies. We would assist with efforts to assess each strategy to see if the desired results are being achieved.

Our role in this element will be a facilitating one. We will be able to assist or to serve as a resource in structuring the problem-solving process. As the staff implements the solution, our role will become advisory. We will offer suggestions, advice, or contribute our perceptions, but implementing the problem solution or strategy will be the responsibility of the administrator or teaching staff. However, we will also assist the school staff in evaluating the results--the final component of our approach.

Evaluation

The final element in our approach is evaluation. Once a problem has been identified, and a strategy attempted, our instruments or portions of them can be used as one method of assessing the effects. This step will complete the cycle but it should lead to another survey feedback session. We see the organizational development process as a continuing one which can be institutionalized and repeated by the school when needed to solve new problems.

Will the Approach Work?

These five core elements constitute our approach to organizational development in schools. The primary purpose of our effort is to enable schools to solve some critical problems and, while they are solving them, to develop an institutionalized capacity for solving future problems. The secondary purpose is to further our knowledge of organizational patterns in schools.

Will these five steps be effective in bringing about organizational change? Will this approach allow us to apply our theories and research in ways that we outlined earlier? Neither of these questions can be answered now. Underlying our approach is a series of hypotheses we will test during the coming year as we begin to use the process with school districts and schools. Many of these hypotheses are the same as those being tested in the longitudinal study of the Environment for Teaching Program. We expect that our intervention or experimental approach will add to the knowledge base the program is building. Other hypotheses are developmental assumptions for our program; their testing will help discover how our knowledge can make a difference in the way schools are organized.

Level of Application

As mentioned earlier in this discussion, we believe that our approach to organizational development is applicable to any organizational level in a school system. We believe that we can use this approach with an entire district, with a local school, or with a team of teachers that is experiencing difficulties. Our analytical scheme may have to be adapted as we change levels, particularly at the level of the teaching team or classroom, but we feel that our structural concepts--differentiation, coordination, conflict, and conflict resolution--can be applied at various levels. To illustrate, we suspect that many team difficulties lie in the relationship between interdependence and coordination. Where teachers cooperate in a highly interdependent fashion, sophisticated coordination mechanisms are needed. But these are both time-consuming

and often difficult to identify. In identifying conflict at this juncture, however, we ascribe conflict not to personality differences but to poor correspondence between team interdependence and coordination. The strategy then becomes one of changing the level of interdependence, developing appropriate coordination mechanisms, or both. The problem is thereby defined organizationally and is solved by changing the characteristics of the structure.

We have chosen to test our approach at the school level, for several reasons. First, we have previously worked informally with survey-feedback techniques at the school level. One instance involved a junior high school that was experiencing difficulty after having adopted an innovation. The other was an elementary school torn apart by struggles with a divided community. Second, we have some evidence that more autonomy is being given to local schools in making decisions and solving problems, that local schools are becoming more closely aligned with their communities, and that principals are experiencing great difficulties in adjusting to the new demands on their role. Third, we have stressed that our approach to schools is structural. However, we also believe that a point of entry into the system is needed, and we have selected the principals as those who mediate between the structure, the program, and the environment at the school level. Their perception of these three elements is crucial, since they have the responsibility for designing or building an organization that will encourage good teaching and learning. Principals need information about the environment and the program, and they need to know what handles they can pull in the organization to structure the activities of teachers and students. Our approach will

therefore begin at the school level, and it is with the elementary school principal that we hope to work most closely during the next year.

Steps in Field Testing the Approach

Beginning in the winter of 1975, we expect to field test our approach to organizational development. We are aware that the process is rough and that it still needsto be refined and perfected. We are aware that thus far it has been developed without much input from the people whom we expect to want to use the approach. To get the needed input, we have entered into a formal affiliation agreement with the Association of California School Administrators (ACSA). This agreement outlines a series of steps in which we will work jointly with ACSA to develop the approach and to field test it.

The first step in our joint work with ACSA will be to put together an advisory group of several administrators. This group, including district-level administrators and elementary and secondary principals, will work closely with us to perfect the approach. We anticipate that the group will meet in a series of intensive seminars in which the approach will be subjected to criticism according to both research and field criteria. The administrators will field test portions of the survey instruments with their staffs, and one would expect that within some of these schools we might conduct a preliminary test of the entire approach. Once the process is refined, together with ACSA we will select several California schools as field sites. Our advisory group will continue to meet and to help us screen the results of the tests. At the end of the preliminary field tests, depending on the outcome, we will

either incorporate the approach into ACSA's existing training program or subject it to additional field testing.

Expected Outcomes

To this point we have designed a process making it possible for us to test a strategy for translating our research into practical consequences. We expect that by the end of 1975 we will have a process that is a prototype for a developmental package. We do not expect to carry our effort beyond the point of developing a prototype. However, by the end of 1975 the Environment for Teaching Program is scheduled to produce a handbook for school administrators, tentatively titled Designing School Organizations. This publication is intended to be the translation of our three-year study into guidelines for policy and practice. Our process for organizational development in schools will be included as a major portion of the publication.

Readers of this memorandum should be aware that effective organizational development is neither a simple nor an inexpensive process. Current OD interventions are often conducted by specialist consultants, whose fees are hardly negligible. The costs of diverting teacher and other staff time to OD training and action cannot be ignored. Moreover, some practitioners of organizational development charge that more harm than good is done by "amateur" application of the principles of OD; the implication is that experts must be retained on a continuing basis or developed--and compensated--within the school staff.

We believe there is an element of truth in this charge. We also believe, however, that the principles underlying the structural approach to OD can be grasped by teachers, principals, and other administrators, and that through training and practice school systems can improve and make cost-effective their capabilities for solving human and organizational problems. Our work is directed toward that end.

Conclusion

We have outlined an attempt to relate our research to the needs of schools as they attempt to solve complex and highly difficult problems. We have shown how our approach has evolved from both our research and our experiments in involving schools more closely with all aspects of that research. We have also tried to distinguish our approach from that of other organizational development efforts. The most notable distinctions are that our approach is structural, that it is closely connected with our ongoing study of school organizations, and that the developmental effort tests further hypotheses from this research as well as hypotheses concerning the effects of our interventions.

Clearly, we are exploring, experimenting, and often groping. However, we in the Environment for Teaching Program are committed to conducting research that pays off to practitioners, and we are determined to carry our developmental, field-oriented efforts as far as our limited resources will permit.

References

Baldridge, J. Victor, and Burnham, Robert. The Adoption of Innovations: The Effect of Organizational Size, Differentiation, and Environment. (Stanford Center for Research and Development in Teaching, R&D Memorandum No. 108) Stanford University, May 1973.

Bidwell, Charles E. "The School as a Formal Organization," in James G. March, ed., The Handbook of Organizations. Chicago: Rand McNally, 1965.

Bowers, David G. "O. D. Techniques and Their Results in Twenty-three Organizations," Journal of Applied Behavioral Science, 9 (1973), 21-43.

Cohen, Elizabeth G., and Bredo, Eric. "Organizational Support for Innovative Instructional Programs: Staff Level." Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, April 1974.

Deal, Terrence E. "The Neglected Structural Side of Organizational Development, or Human Relations is Not Enough," Thrust (Association of California School Administrators), 4, No. 2 (1974), 21-24.

Deal, Terrence E., and Baldridge, J. Victor. An Organizational View of Educational Innovation. (Stanford Center for Research and Development in Teaching, R&D Memorandum No. 126) Stanford University, October 1974.

Deal, Terrence E., Meyer, John W., and Scott, W. Richard. "Organizational Support for Innovative Instructional Programs: District and School Levels." Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, April 1974.

Dornbusch, Sanford M., and Scott, W. Richard. Evaluation and the Exercise of Authority: A Theory of Control Applied to Diverse Organizations. San Francisco: Jossey-Bass, in press.

House, Robert John. "Principals' Perceptions of Authority Relationships in Open-Space and Traditional Elementary Schools: A Study of Team Teaching and Self-Contained Classrooms." Unpublished doctoral dissertation, Stanford University, in preparation.

Lawrence, Paul R., and Lorsch, Jay W. Organization and Environment. Cambridge, Mass.: Harvard University Press, 1967.

Meyer, John W., and Cohen, Elizabeth G., with Brunetti, Frank A., Molnar, Sheila R., and Lueders-Salmon, Erika. The Impact of the Open-Space School upon Teacher Influence and Autonomy: The Effects of an Organizational Innovation. (Stanford Center for Research and Development in Teaching, Technical Report No. 21) Stanford University, October 1971.

Miles, Matthew. "Planned Change and Organizational Health: Figure and Ground," in Richard Carlson, ed., Change Processes in the Public Schools. Eugene, Ore.: Center for the Advanced Study of Educational Administration, 1965.

Molnar, Sheila R. F. Teachers in Teams: Interaction, Influence, and Autonomy. (Stanford Center for Research and Development in Teaching, Technical Report No. 22) Stanford University, November 1971.

Schiller, Clarke Edward. "A Comparative Study of Collegial Authority Structure and Visibility in Elementary School Teaching Teams." Unpublished doctoral dissertation, Stanford University, 1972.

Schmuck, Richard A., Runkel, Philip J., Saturen, Steven L., Martell, Ronald T., and Derr, C. Brooklyn. Handbook of Organizational Development in Schools. Palo Alto, Calif.: National Press Books, 1972.

Smith, Louis M., and Keith, Pat M. The Anatomy of Educational Innovation: An Organizational Analysis of an Elementary School. New York: Wiley, 1971.